

DETAILED ACTION

The rejection is as stated in the previous Office Action (mailed October 18, 2007):

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 46, 47, and 112 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (5,691,490) in view of Aitken et al. (4,658,690). Regarding claims 1 and 112, Williams discloses the use of customizable (col. 4, lines 12 – 16) aggregated instrument comprising a plurality of individual musical modules (20, 30) which generate electrical signals (col. 4, 4th paragraph), a means for securing in a reconfigurable mounting arrangement (fig. 3; col. 2, lines 10 – 14), wherein each module is readily positionable with respect to each other, within any of a plurality of mounting locations (the Applicant has not claimed any element to which the position is relative, therefore, both 20 and 30 are deemed to be “readily positionable”), and a means for transmitting interface signals to an external system (col. 4, 4th paragraph). Regarding claim 2, the frame 40 has a linear arrangement (fig. 3). Regarding claim 4, the lower bout of the stringed instrument is curved, giving the upper edge of 40 a curve

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(fig. 5). Regarding claims 46 and 47, elements 26 are strings of module 20. Williams does not explicitly disclose that each module is readily positionable within a plurality of mounting locations of the mounting frame. Williams clearly shows a keyboard that is readily positionable mounted with a neck board. Aitken discloses the use of music modules (22, 40, 50, 70) having a keyboard (70) and a readily positionable neck board (22; col. 23, lines 21 – 28). It would have been obvious to one of ordinary skill in the art to combine the teachings of Williams and Aitken to obtain an aggregated instrument wherein each of the modules is readily positionable with respect to a mounting frame. The motivation for making this combination would be to provide a user with the flexibility to position the module in the most comfortable position to allow easy fingering.

3. Claims 48 – 52, 62, 64, 84 – 86, 91 – 93, 103, and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Aiken and in further view of Tumura (5,585,588). The teachings of Williams and Aiken have been discussed supra with respect to independent claims 1 and 112. Regarding claim 48, Williams nor Aiken teach the use of an unfretted neck. However, Williams does teach the use of including “all types of electric guitars” – this would, include the very common fretless bass guitar. One of ordinary skill in the art would have thought to provide Williams with an unfretted neck. The motivation for making this combination would be to provide those musicians who favor a fretless bass guitar the opportunity to utilize the invention (and thus the keyboard) as shown in Williams. Regarding claim 49, Williams nor Aiken explicitly teach the use of sympathetic strings. The Examiner maintains that *all* strings are sympathetic, thus Williams would show a “plurality of sympathetic strings.”

However, Tumura explicitly teaches that strings of an instrument can vibrate sympathetically (col. 1, lines 44 – 51). (The Examiner also notes that stringed instruments having separate sympathetic strings – i.e., those not meant to be strummed or plucked – have been in existence for thousands of years, such as sitars.) Regarding claim 50, Williams nor Aiken teach the use of a drive transducer to stimulate vibration. Tumura discloses a drive transducer (17; col. 17, lines 7 – 15) to provide stimulation to the vibrating element. It would have been obvious to one of ordinary skill in the art to combine the teachings of Williams, Aiken and Tumura to obtain an aggregated instrument having an unfretted neck, sympathetic strings, and a driver for stimulating vibration. The motivation for making this combination is that each of these elements offers a unique and interesting sound, and any musician who appreciates these sounds would be motivated to provide them into the Williams invention. Regarding claim 51, Williams does not show an electronic controller module secured within one of the plurality of mounting locations. However, Williams does teach the use of “conventional electronics downstream of the pickups 28 are provided, viz., one or more synthesizers, MIDI’s and computer(s) depending on the wishes of the musician/sound engineer, together, of course, with suitable amplifiers and speakers” (col. 4, 4th paragraph). Also see Aiken’s fig. 4). The Examiner notes that “downstream of the pickups” may include a location on the instrument body as is common with virtually all commercially available electric guitars (i.e., volume and/or tone controls). It would have been obvious to one of ordinary skill to provide Williams with an “electronic controller module.” The motivation for making this addition would be to allow a user to change her volume while playing the

instrument. Regarding claims 52, 62, 64, the use of keyboards, sliders, and impact sensors are notoriously well-known in the electronic music art and Official Notice is hereby taken (e.g., DSP remotes with keys are frequently mounted to guitars, sliders are often used on guitars as volume controls, and impact sensors are frequently used to trigger MIDI devices). Regarding claims 84 – 86, 91 – 93, 103 and 105 all limitations have been discussed supra except the hierarchical modules using “small-scale” modules. The Examiner maintains that a mere variation in size is not a patentable feature. For example, a small module within a module is still a module. For the Applicant to define “small-scale” module in some kind of hierarchical relation is deemed to be arbitrary. For the purposes of this rejection, the Examiner is interpreting the modules (20, 30) of Williams to be “small-scale” and the Williams’ instrument as a whole to be a “mounting location.”

4. Claims 84 – 86, 91 – 93, 103, and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams and Aiken in view of Tumura (5,585,588) and in further view of Norton (5,994,633). The teachings of Williams, Aiken and Tumura have been discussed supra. As stated supra, the Examiner maintains that “small-scale” does not constitute a patentable limitation. However, to strengthen the Examiner’s position, the following rejection is put forth: Regarding claim 84, neither Williams, Aiken nor Tumura disclose a small-scale module (interpreted here as a “module within a module”). Norton discloses a control module (132) having plural and separate controls (134) within the control module (132). The Examiner is defining these controls (134) as “small-scale” modules within a module (132), i.e., a module within a module. Regarding claims

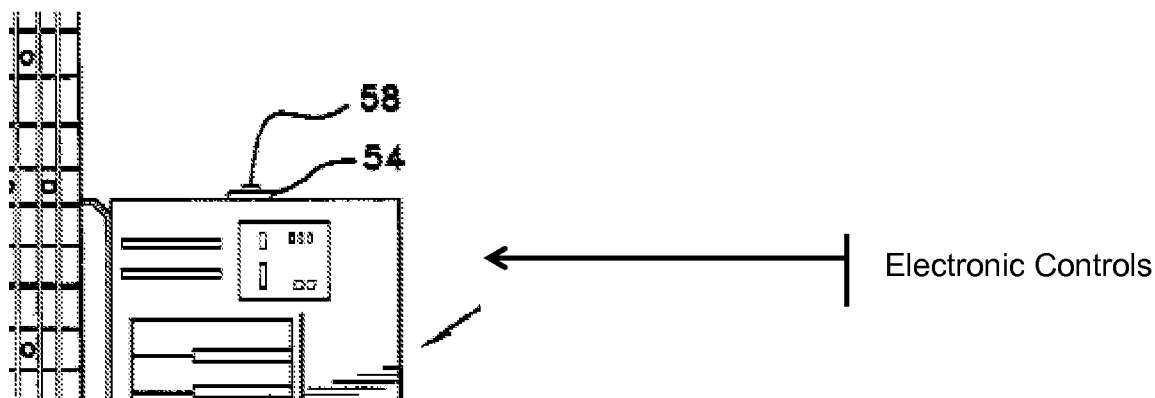
85, 86, 91 – 93, 103, and 105 all limitations have been previously discussed. It would have been obvious to one of ordinary skill in the art to combine the teachings of Norton with those of Williams, Aiken and Tumura. The motivation for making this modification would be to allow a musician with plural controls to augment and/or enhance the musicians music (e.g., to provide control of both tone and volume, or both pickup phase and pickup selection, etc.).

Response to Arguments

5. The Applicant argues that "Williams, therefore provides, at best one musical module that generates an electrical signal. Consequently, Williams cannot teach or suggest that 'wherein *each* musical module of said plurality of individual musical modules generates an electrical signal.'" [Applicant's emphasis]. The Examiner does not concur. First, as noted by the Applicant, Williams suggests that synthesizers, MIDI's, etc. may be provided downstream from pickups 28. Certainly keyboard 30 may be located downstream (both MIDI and synthesizers generate electrical signals). Second, the drawings of Williams specifically indicate an electrical keyboard (see annotated diagram below). Third, while Williams maybe silent (except for the drawings) as to the keyboard generating an electrical signal, the use of an acoustic signal would render the invention to Williams unplayable in most situations. For example, the keyboard could not possibly posses strings (due to size alone). Nor could it posses pipes (e.g., a pipe organ) for the same issued due to size. That leaves "rigid vibrators"

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e.g., xylophone-type bars. Again, the keyboard shown by Williams (see fig. 2) could not possibly contain enough bars to accommodate two octaves (for comparison, see art cited by Williams - to Milito, 1425032). Milito clearly shows a single octave, adding a higher octave to Milito would be impossible since such short vibrating bars produce tones too high and too quiet (short bars produce much quieter tones). To add an octave below the one shown by Milito would render a much larger space requirement (clearly not shown in Williams). Fourth, at time of the Williams patent, electrical guitars produce a much louder sound than conventional acoustic instruments, the intention of Williams is to play the instruments simultaneously (col. 1, line 58). In this situation, a non-electrical keyboard would greatly reduce the playability of the instrument and Williams intention (i.e., simultaneous playing).



6. The Applicant argues that “Aitken simply discloses that one (strings 40), not a plurality, of musical modules is readily positionable. [Applicant’s emphasis]. The Examiner does not concur. The Examiner maintains that strings 50 (and keyboard 70)

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and strings 40 are both readily positionable relative to each other. The Applicant's annotated diagram indicates that strings 50 and keyboard 70 are fixed. If a musician prefers strings 40 at a specified angle to her body, wouldn't she move strings 50 (or keyboard 70) to be in a preferred position? Or she may prefer one position for strings 50 and strings 40, then adjust both when playing keyboard 70 and strings 40 (or adjust both between playing in a standing position and sitting position). In other words, none of the components of Aitken are "fixed" since this is a relative term, and Aitken (nor Applicant) has not provided any standard for which to compare. The components are both readily positionable with respect to each other.

7. The Applicant argues that the Double Patenting rejection is erroneous since "the identified claims recite different claim elements." The Applicant attempts to show this by comparing claims 1 and 12 of the present application with claim of '042. The Examiner does not concur. The embodiment of claim

Double Patenting

8. The Applicant's arguments are persuasive. The Applicant has noted the distinction between a "musical module" and a "foot controller module." The Double Patenting rejection is hereby vacated.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **DAVID S. WARREN** whose telephone number is (571)272-2076. The examiner can normally be reached on M-F, 9:30 A.M. to 6:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-2837. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David S. Warren/
Examiner, Art Unit 2837